REMARKS/ARGUMENTS

Favorable reconsideration and allowance of the present application are respectfully requested in view of the following remarks. Claims 1-14 remain pending. Claims 1 and 6 are independent. Claim 1 is amended to enhance clarity. The scope of the claim remains substantially the same.

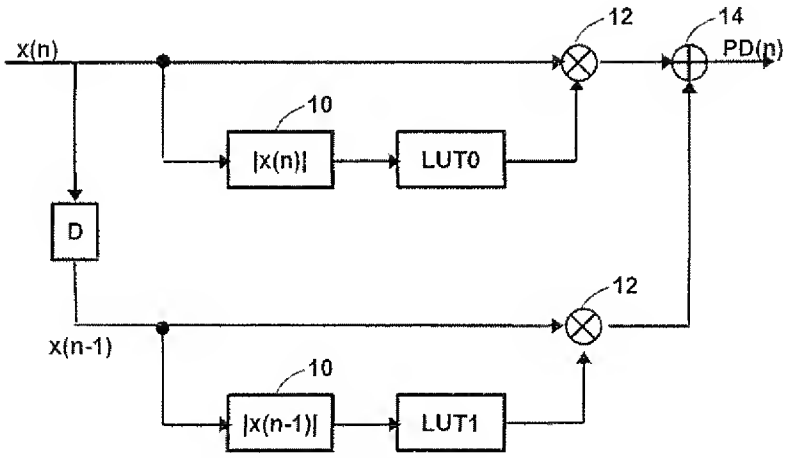
Claims 1-14 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Wright (U.S. Publication No. 2002/0008578). Applicant respectfully traverses.

Wright does not teach or suggest all claimed features. For example, independent claim 1 is directed toward a training method for a power amplifier pre-distorter formed by a FIR filter structure, in which the FIR filter structure includes an individual look-up table for each filter tap. Each look-up table represents a discretized polynomial in a variable representing signal amplitude.

A non-limiting exemplary pre-distorter including exemplary FIR filter structure of the invention is illustrated in Fig. 7 of the disclosure. As seen, complex input signal x(n) is provided to a first absolute value block 10 which outputs an absolute value signal $|x(n)|$, which is then provided to a look-up table LUT0 representing a sampled version of polynomial T_0. *See equation (2) on p.6 of disclosure.* The corresponding (generally complex) value output from look-up table LUT0 is forwarded to the multiplier 12, where it multiplies the input signal sample x(n).

The input signal x(n) is also forwarded to a delay block D, where it is delayed by one or several sample periods. Output of the delay block D is a delayed sample signal x(n-1). This delayed sample is processed in the same way as the non-delayed sample by corresponding absolute value block 10, multiplier 12 and a look-up table LUT1. The output of the absolute value block 10 is now the delayed absolute value signal |x(n-1)| which is then provided to the look-up table LUT1. The look-up table LUT1 now represents a sampled version of polynomial T_1 instead of T_0. As illustrated in FIG. 7, further delays and look-up tables may be included. Finally, the obtained products are added to each other in adders 14 to form the pre-distorted signal PD(n).

For simplicity, an equivalent structure with two taps (taps associated with LUT0 and LUT1) is reproduced below.[1]

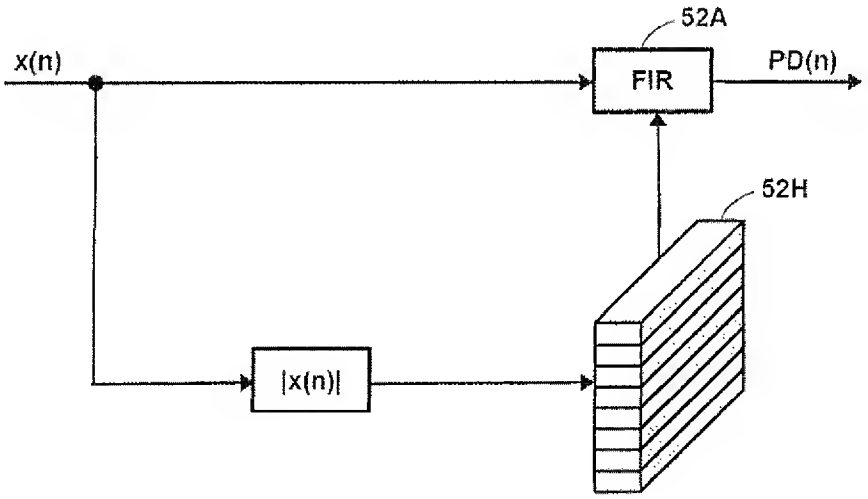


One important feature is that the FIR filter structure has an individual look up table (LUT0, LUT1) for each filter tap. Also, the look-up tables are each

[1] It should be noted that the explained concept can be generalized to many more taps (e.g., for taps 2 through Q).

indexed by different indices. In the illustrated figure, LUT0 is indexed by the absolute value signal |x(n)| and LUT1 is indexed by the absolute value signal |x(n-1)| to select the respective filter coefficients. In claim 1, this is reflected in the recitation "selecting, from each filter tap look-up table, a filter coefficient that depends on the amplitude of a corresponding complex signal value to be multiplied by the filter tap."

Wright does not disclose this feature. For ease of comparison, Wright's pre-distorter structure of Fig. 3 is reproduced in which the instantaneous magnitude |x(n)| is used to select filter coefficients. The multidimensional table 52H is restricted to a one-dimensional table. *See paragraph [0097.*



In Wright, there is a common lookup table 52H in which each table element includes a coefficient set for the entire FIR filter 52A. Wright specifically states "In such embodiment, each element of the table again stores a complete set of compensation parameters, but the table is now indexed (accessed) based solely on an instantaneous attribute of the input signal, such

as the signal's magnitude." *Emphasis added; see [0097].* That is, the table 52H is indexed by the same (current) index $|x(n)|$. This single index provides the entire coefficient set for the FIR filter 52A as described in Wright.

As seen, Wright does not teach or suggest the feature of selecting, from each filter tap look-up table, a filter coefficient that depends on the amplitude of a corresponding complex signal value. It then naturally follows that Wright does not teach or suggest the features of "determining a first estimate of a first look-up table assigned to a first filter tap, assuming a second look-up table assigned to a second filter tap is set to predetermined table values" and "determining a second estimate of the second look-up table, assuming the first look-up table is set to the determined first estimate."

This is sufficient to distinguish the claimed subject matter from Wright. But in addition, each look-up table represents a discretized polynomial in a variable representing the signal amplitude. This feature is simply not described in Wright.

Both the above differences are important in that they serve as the basis for the claimed training procedure. The training procedure is based on equations (3) and (4) in the specification. Here the discretized polynomial T_0 represents LUT0 and the discretized polynomial T_1 represents LUT1. The variables y(n) and z(n) are the pre-distorted signal and the feedback signal, respectively, as shown in Fig. 8 of the present application. The procedure is based on the feature that the tables are separate and have elements that differ

in order of magnitude. *See disclosure, p.8, l.8 — p.10, l.16.* This makes it possible to first determine a first table assuming that the second table is constant, and then determine the second table assuming that the first table is constant (set to the just determined values). This procedure can be repeated, if necessary, as described in the sub-claims.

In summary, claimed method of claim 1 is simply not described in Wright. For at least the reasons stated above, independent claim 1 is distinguishable over Wright. Independent claim 6 is also distinguishable over Wright for similar reasons. Dependent claims 2-5 and 7-14 are distinguishable over Wright by virtue of their dependencies from independent claims 1 and 6 as well as on their own merits.

Applicant respectfully requests that the rejection of claims 1-14 be withdrawn.

All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance. Should there be any outstanding matters that need to be resolved, the Examiner is respectfully requested to contact Hyung Sohn (Reg. No. 44,346), to conduct an interview in an effort to expedite prosecution in connection with the present application.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Respectfully submitted,

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